

**Brookhaven National Laboratory  
Plant Engineering - E&CS Division  
Engineering Change Notice Form**

**PROJECT:** CCWF II

**JOB No.** 11705

**ECN Title:** Steam Unit Heaters

**ECN No.** 1

**Affected Documents:** M-610, Specification Section 15700, 2.6 A

**Requested Change (Attach sketch if applicable):** The unit heater schedule and specification indicate vertical discharge while drawings M-101 and M-102 show horizontal discharge. Suggest changing the schedule and specification to indicate horizontal discharge.

**Requested by:** Giffels

**Date:** 09/30/2009

**Resolution:** See attachments.

**Approvals:** A/E or Proj. Eng.:

*W. Harrison*

**Date:** 10.12.09

**Project Coordinator:**

*Al Ryzak*

**Date:** 10/12/09

**Manager:**

**Date:**

**Contractor shall take the following action:**

- ☐ Await change order from P&PM
- ☒ Proceed with change as described
- ☐ Provide cost proposal for change as described

**Distribution:** E. W. Howell

Giffels

E&U

MPO

O&M

ECN File

NSLS II

BNL CCNFI11  
 ECN #1  
 DWG EXTRACT M-610  
 9/30/09

UNIT HEATER (STEAM) SCHEDULE																	
MARK	AREA SERVED	CFM @ 70 °F	MOUNTING HEIGHT (FT)	AIR TEMP °F		MBH	STEAM DATA					MOTOR		DESIGN BASIS MFR/MOD NO.	OPERATING WEIGHT	REF DWG NO.	REMARKS
				ENT	LVG		PRES (PSIG)	MAX PD (LBS)	FLOW (LBS/HR)	TRAP CAP (LBS/HR)	HP (MIN)	VOLT	PHASE				
SUH-7	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-101	
SUH-8	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-101	
SUH-9	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-101	
SUH-10	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-101	
SUH-11	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-102	
SUH-12	OPERATING FLOOR	<del>470</del>	10	40	<del>100</del>	34.3	15	—	35.3	72.6	1/40	115	1	TRANE P-2L	50 LBS	M-102	
	* 450			40	100	34.3			34.3	68.4	16			S-24			

WATTS

\* REVISED PERFORMANCE DATA TO REFLECT "S" TYPE STEAM UNIT HEATER. DATA IS TYPICAL FOR SUH-7 THRU SUH-12

## 2.6 STEAM UNIT HEATER (SUH-7 THRU SUH-12)

HORIZONTAL PROTECTION

- A. *Steam unit heater (SUH-7 thru SUH-12) [D]*: Suspended ~~vertical~~ type steam unit heaters arranged for discharge of air with adjustable outlet as indicated, rated per AMCA Standards. Manufacturer's standard nonferrous construction heating element, rated for service at not less than 300 degF at 75 psig. Construct casings of not less than 20 gage cold rolled black carbon steel. Casing surface finish shall include phosphate pretreatment, prime coating and baked enamel finish. Furnish propellers, manufacturer's standard, dynamically balanced. Provide and resiliently mount motors per Division 15 Section "General Mechanical Requirements."

1. Trane, ~~P-Series~~ **S SERIES**
2. Modine.
3. Air Therm.
4. Sterling.

## 2.7 STEAM FINNED TUBE RADIATION

### A. Finned Tube Radiation

1. Furnish with heating elements and supports.
2. Rate finned tube assemblies for not less than indicated capacity per IBR "Testing and Rating Code for Finned Tube Radiation", and CS-140-47.
3. Rate system pressure components including heating elements for the service expansion. Rate accessories for service at not less than 300 degF and 50 PSIG.
4. Steel single row 1-1/4" heating element with steel fins shall deliver heat output as indicated; fins 3-1/4 x 3-1/4 inch with thickness of 0.032-inch minimum and spaced 20 fins per foot minimum. Length as shown on DRAWINGS.
5. Provide minimum 18 gauge cold rolled steel enclosures with sloped top and electrostatically applied, baked enamel finish, color as selected by the architect from the manufacturer's standard color schedule. Discharge openings shall be die cut into the enclosure. Review drawings to identify where wall-to-wall cover is required. Field measure actual construction prior to manufacturing enclosure to assure good fit. Field cutting to fit will not be permitted. For finished end installations, provide necessary end caps for a complete installation. Include access doors in the enclosure as necessary to allow ready access to manual and automatic valves for maintenance and inspection.
6. Refer to 13800 Series Sections for control valves and thermostats.
  - a. Sterling, JVA-S-14 with S-132 element.
  - b. Dunham-Bush.
  - c. Standard.
  - d. Webster.
  - e. Vulcan.